

Thursday, September 08, 2016 1:26:59 PM

Page 1

NS1

NS2

Customer:

NR1

NR2

0.00

CUT PER DRWG D4150 REV.B

0.00

0.00

0.00

0.00

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					

Work Order ID 150831***150831***

Page 2

Thursday, September 08, 2016 1:26:59 PM

Item ID: D4150-3 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Arm Plate
Start Date: 9/2/2016 Start Qty: 12.00 ***12*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 12.00 ***12*** Customer:
Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Identify as per dwg & Stock Location: <u>Stop</u>	0.00							
150									
Packaging	Memo	0.02							
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
160									
QC	Memo	0.20							
Quality Control									

12 SEP 30 2016DAS
6
9-89DAS
21
9-89

OCT 03 2016

DAS
21
9-89 SEP 30 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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OTHER :																					

Thursday, September 08, 2016 1:27:04 PM

150831

D4150-3

Required Date: 9/23/2016

Required Qty: 12.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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12

12 x Sp/69-26

0.320842

SEP 12 2016

**DAS
13
9-89**

Loc Code



2.21998

0.5

2.79

64.6

4.2700336

4.2700336

DQA: _____ Date: _____

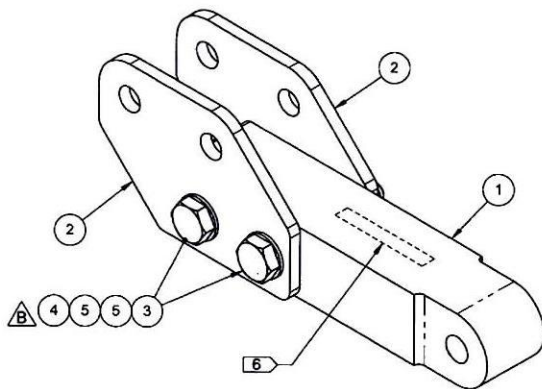


WORK ORDER NON-CONFORMANCE / UPDATE

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				QC / QA Coordinator Approval	
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OTHER : ☐					



D4150-041 ATTACHMENT ARM ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4150-041" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.82 lbs

ITEM	QTY -041	P/N	DESCRIPTION
	X	D4150-041	ATTACHMENT ARM ASSY
1	1	D4150-1	ARM
2	2	D4150-3	ARM PLATE
3	1	AN3C13A	BOLT
4	1	MS21043-3	NUT
5	2	NAS1149C0332R	WASHER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 150831 MLS

16-09-08

RELEASED
2010-07-16

B	REPLACED QTY(3) MS20615-4M20 WITH QTY(2) EACH AN3C13A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZIN D3-1), Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZIN C5-2, C7-2, B4-3 & B5-3) REASON: SEE TR-D350-607-2 REV. B.	MB	10.07.08
A	NEW ISSUE	MB	10.06.18
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.07.08		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4150** REV. B
SHEET 1 OF 3
TITLE **ATTACHMENT ARM ASSY** SCALE NTS

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DQA: _____ Date: _____

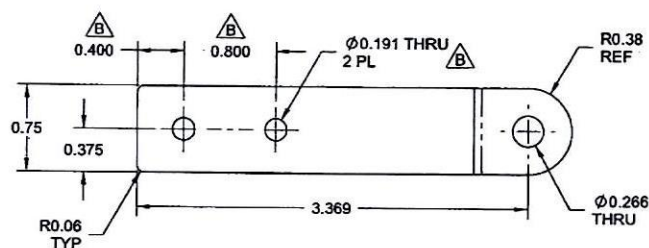
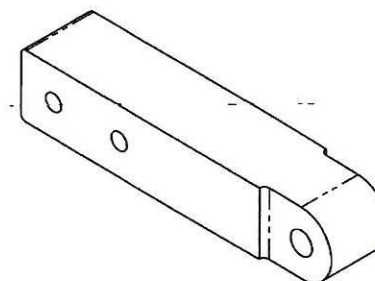
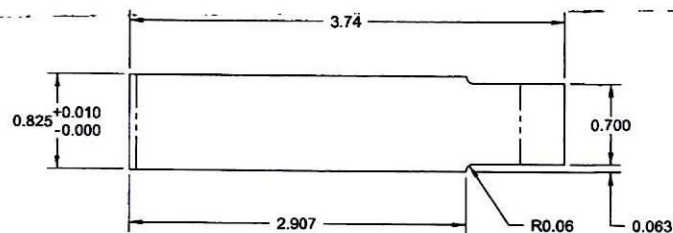


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Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
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Material ☐	☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	☐	Manufacturing Process ☐	OTHER :						
Misidentified ☐	☐	Past Due ☐							



D4150-1 ARM

RELEASED
2010-07-16
MP

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.60 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D4150	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		ATTACHMENT ARM ASSY	NTS
DATE	10.07.08	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE LOANED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

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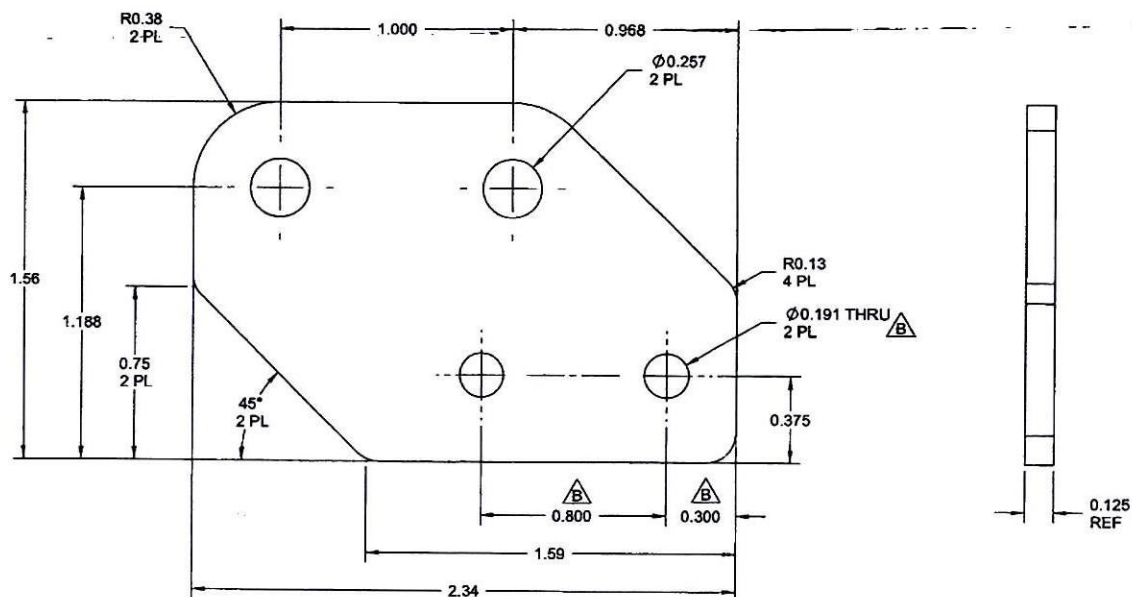


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LOA ☐	☐	Product Improvement																																																																													
Substation ☐	☐	Process Improvement																																																																													
Past Expiry Date ☐	☐	Manufacturing Process																																																																													
Misidentified ☐	☐	Past Due																																																																													
Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																																																																												
Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																																																																												
Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																																																																												
Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																																																																												
Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																																																																												
Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																																																																												
Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																																																																												
Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																																																																												
Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																																																																												
Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																																																																												
OTHER : _____																																																																															



D4150-3 ARM PLATE

RELEASED
2010-07-16

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL 0.125" THICK SHEET ANNEALED 2B FINISH, PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240 REF DART SPEC M304S11GA OR M303S11GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.10 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D4150	REV. B
MFG. APPR.		TITLE ATTACHMENT ARM ASSY	SHEET 3 OF 3
APPROVED		DATE 10.07.08	SCALE NTS
DE APPR.		COPYRIGHT © 2010 BY DART AEROSPACE LTD	
		THIS DOCUMENT IS PROPRIETARY AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																		
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																		
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																		
Large Fab ☐	Composite ☐	Supplier ☐																			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval																	
Description Work Order Deviation			Disposition																		
						Completed By															
						Lead hand / Supervisor Approval Verification															
			QC / QA Coordinator Approval																		
Root Cause			FAULT CATEGORY																		
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐																
OTHER : _____																					



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO33617

Purchase Order Date 9/12/2016

PO Print Date 9/19/2016

Page Number 1 of 4

Order From :

VC-TPI001

Ship To : DART AEROSPACE LTD

TPI INDUSTRIES INC.
148 RUE GOODFELLOW
DELSON, QUEBEC J5B 1V4
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

SEP 20 2016

REVISED

Contact Name

Vendor Phone 450-633-0484

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
Line Comments		Promise Date					
Delivery Comments							
1	D4150-3P	Arm Plate	10/3/2016 Yes 10/3/2016	FN	12.00 Each	\$5.00	\$60.00
CUT AS PER DWG D4150 REV. B B150831 MATERIAL 304 SHEET 11GA							
Line Total:							\$60.00
2	D3405-043F	Lug Assembly	10/3/2016 Yes 10/3/2016		10.00 Each	\$9.45	\$94.50
CUT AS PER DWG D3405 REV. B B150832 MATERIAL 304 SHEET 11GA							
Line Total:							\$94.50

Note:

9/19/2016

T.P.I. INDUSTRIES INC.

148 GOODFELLOW
DELSON, QUÉBEC J5B 1V4
CANADA
Tel: (450) 633-0484
Fax: (450) 633-0879

Packing Slip

Packing Slip No.: 7785
Date: 2016-09-20
Page: 1

Sold to: Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada	Ship to: Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada
Order No.: 33617	Sold By:
Shipped By:	Ship Date: 2016-09-20
Tracking No.:	

Item No.	Unit	Description	Quantity
d4150-3	Chaque	d4150-3 arm plate	12
d3405-043	Chaque	d3405-043 gh lugs	10
d3405-041	Chaque	d3405-041 gh lugs	12
d4011-1	Chaque	d4011-1 clamp	60
d2519	Chaque	d2519	60
d5152-1	Chaque	d5152-1 fwd post mount	12
d4925-1	Chaque	d4925-1 eaps mounting plate	12
d4462-1	Chaque	d4462-1 baffle	4
d4462-3	Chaque	d4462-3 baffle	4

Sp/16-9-26

Comment: Net / 30 from date of invoice 2% svc. chg. on invoices over 30 days

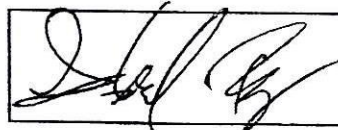
TPI Waterjet cutting follow up sheet

wc100132

machine hours	1316
diamond hours	32
mixing tube hours	0
TAJ calibration	14-09-2016 (1314h)

customer po	part #	Qty	lot #	date done	cut by	quality spot check	Note
dart 33617	d4150-3	12	see mill test	15-09-2016	GR	Jonathan Lessard Gabriel Rioux	SP/6-9-26
dart 33617	d3405-043	10	see mill test	15-09-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 33617	d3405-041	10	see mill test	15-09-2016	GR	Jonathan Lessard Gabriel Rioux	10 instead of 12 (not enough material to produce)
dart 33617	d4011-1	60	see mill test	15-09-2016	GR	Jonathan Lessard Gabriel Rioux	
dart 33617	d2519	60	see mill test	15-09-2016	GR	Jonathan Lessard Gabriel Rioux	

Opérateur



Superviseur



